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Clinical observations
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Goodell's Uterine Fibroids

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THE OBSTETRICAL JOURNAL OF GREAT BRITAIN AND IRELAND
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WITH AN AMERICAN SUPPLEMENT.

EDITED BY J. V. INGHAM, M.D.,

Obstetrician to the Hospital for Women and Infants, Philadelphia.

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AMERICAN SUPPLEMENT

TO THE

OBSTETRICAL JOURNAL OF GREAT BRITAIN AND IRELAND
APRIL, 1879.

Original Communications.



Clinical Observations upon the Treatment of Uterine Fibroids; with a Case illustrating the Operation of Enucleation.

By WILLIAM GOODELL, A.M., M.D., Professor of Clinical Gynecology in the University of Pennsylvania.

Lecture delivered at the Hospital of the University, March 13, 1879.

[Reported by FRANK WOODBURY M.D.]

GENTLEMEN: While our patient is being etherized I shall embrace the opportunity of making a few remarks upon the pathology and treatment of fibroid tumors of the womb, of which she presents an unusually good illustration. Her clinical history I shall speak of further on.

The uterus is peculiarly liable to be invaded by foreign growths, perhaps more so than any other portion of the body. In practice we very often meet with benign and malignant tumors of the womb, the former fortunately more frequently than the latter. But that most commonly encountered of all in this situation, is the variety of non-malignant growth known as *fibroma*, or, more often, simply as *uterine fibroid*. The fact that these tumors occur so frequently is not so widely known and generally appreciated as it should be. Mr. Pollock, of St. George's Hospital, reports that during a period of ten years, out of nearly six hundred women dying in the Hospital of various diseases and at different ages, about seven per cent. were found to have fibroid tumors of the womb, only one subject being under the age of thirty. Bayle makes the proportion much larger: he states that these growths are present in twenty per cent. of women

over thirty-five years of age; while Klob¹ says that "undoubtedly forty per cent. of the uteri of females who die after the fiftieth year contain tumors." It would therefore appear, *firstly*, that these disorders are common; *secondly*, that the tendency increases with advancing age. What is remarkable is that these uterine fibroids are almost universal in elderly colored women, and are not infrequently met with in young mulatto girls, as well as in those of pure African blood, even before the age of twenty, which is not the case with white girls.

These fibroid growths are due to nutritive changes in the walls of the womb, and are derived from the natural muscular and connective tissues of the part. If you should take a mere shred from one of these tumors and place it under the microscope, I doubt if you could detect any difference between it and the adjacent hypertrophied uterine tissue. But should you make a section, and study its topographical relations, you would see at once a disorderly arrangement of the tissue-filaments in striking contrast with the regular and orderly disposition of the bundles seen in the uterine structure. At an early period of its development a fibroid tumor is simply an expression of increased nutritive activity at some spot in the muscular layer of the uterine wall. It is then simply a mass of hypertrophied muscular elements bound together by connective tissue, as in the normal state; it is then, properly speaking, a *myoma*. As the growth increases in bulk by proliferation of its cells, it shows no disposition to infiltrate surrounding structures, but simply displaces them by crowding them away in every direction. Its relation to the surrounding stroma is not a very close one; a delicate areolar and vascular connection exists, but it is so slight that the tumor can often be shelled out of its capsule just as an orange is peeled from its rind.

These growths very rarely begin in the cervix, but generally take their origin in the corpus of the womb, and more frequently in the posterior than in the anterior wall.

After taking a start, they grow in the direction of least resistance, and their subsequent course depends wholly upon the site of the tumor, and in what layer of muscular fibres it originated.

¹ Path. Anat. of the Female Sexual Organs, Am. ed., 1868, p. 177.

If immediately under the peritoneal surface, it will, in growing, project into the abdominal cavity; if in a deeper layer, it will develop equally in both directions; if directly under the mucous surface, it will encroach upon the cavity of the womb. As we shall presently see, the amenability of the case to treatment, and the prognosis, are largely influenced by these conditions. They have therefore been deemed of such importance as to be made the basis of classification, forming three varieties:—

- (a) *Sub-peritoneal, sub-serous, extra-uterine, or surface* fibroids are those which project from the surface of the womb into the abdominal cavity, carrying with them a peritoneal investment.
- (b) *Interstitial, parietal, intermediate, or intra-mural* fibroids are those imbedded in the uterine wall, and are covered on all sides by uterine tissue.
- (c) *Submucous, intra-uterine, or cavity* fibroids are in-growths into the uterine cavity, and are covered by a mucous coat.

Of these the first attains the greatest size, and is the least amenable to surgical interference. Under these circumstances it is fortunate that its symptoms are less urgent than those of the other varieties. The earliest and most marked disturbance produced by the fibroid is in the catamenia. The flow is increased and the intermenstrual period shortened. The last-mentioned, or submucous variety, in particular, produces menorrhagia, although the interstitial fibroids are by no means entirely innocent upon this score. The interstitial and submucous fibroids are also accompanied by general hypertrophy of the uterus, enlarging its cavity sometimes to five or six inches in depth. The uterine blood channels are also enlarged, and upon auscultation a venous hum is heard like the so-called "placental bruit." The louder this *bruit* in a case of parietal fibroid, the thicker is the layer of uterine tissue between it and the ear—this is a useful diagnostic hint.

Pregnancy rarely occurs in a womb which is the site of a large fibroid growth, but it may when the tumor is a small one. But, as a rule, sterility may be named as one of the symptoms of uterine fibroid. Pelvic pains and colic usually attend the

enlargement of the uterus from the presence of a submucous or cavity growth. Hemorrhage is rarely absent. These growths, however, exhibit considerable individuality, and some will attain a comparatively large size without being suspected, while others of much less size may assert themselves by striking and unmistakable signs.

Uterine fibroid tumors are of great density, of almost stone-like hardness, and like trees of hard fibre their development is slow. While the womb is increasing in size, considerable inconvenience is sometimes experienced from mechanical irritation or from obstruction of the rectum or of the bladder; subsequently the mass rises gradually out of the pelvic canal into the abdominal cavity above the superior strait, and the pressure symptoms are at once relieved. It is a great comfort to patients to be assured that these fibroid growths are not malignant, and that they never undergo cancerous degeneration.

The treatment of fibroid tumors is based upon four different indications: *first*, to stay the bleeding; *second*, to lessen the pains which they produce; *third*, to stop their growth; and, *fourth*, to remove them if possible, or as much as is practicable in case their size forbids extirpation. To check the hemorrhage is often the most pressing need in the early treatment. Put the patient in bed; keep her absolutely quiet. Ergot here is our sheet-anchor. It may sometimes cause more bleeding at first in the submucoid variety, but usually it will check it. It should be given in large doses, at least a teaspoonful of the fluid extract every three or four hours during the continuance of the bleeding. It is sometimes rendered more efficient by the conjunction of erigeron oil. If this is insufficient, vaginal injections of hot water and hot applications to the spine, are useful adjuvants. Next to ergot, gallic acid in doses of twenty grains every second or third hour, until several doses are taken, has proved very efficient in my hands. Sufficient opium, either as suppository or by the mouth, should be given to relieve the pains. Hypodermic injections of morphia will sometimes be needed.

Having succeeded in stopping the hemorrhage, some precautions should be taken in the interim to guard against its recurrence at the next menstrual epoch. In order to accomplish this

you will give medicines that reduce the congested state of the womb and allay its nervous excitement. Bromide of potassium, digitalis, tincture of nux vomica, and, if there has been much loss of blood, iron may be added to the treatment. You will have to be cautious in giving iron, for in some cases it seems to keep up the bleeding; and, indeed, I am not sure that quinine may not do the same thing.

In a case of profuse hemorrhage from the uterus, you must not let the woman bleed to death. To confront what Homer calls the "purple death," what is to be done? Take a strip of lint and wet one end with Monsel's solution. This end is next carried up to the cervix through a speculum and packed into the canal by the uterine sound. The other end is left free in the vagina for convenience of removal. This corks up the womb and is sure to stop the flow. What I, however, prefer, is the introduction of a piece of clean sponge, or preferably a sponge-tent. I should use the latter on account of its cleanliness, the blood oozing through it, washes it sweet and free from fetid discharges; it may therefore be allowed to remain in for a longer time than the strip of lint. A large sponge-tent dilates the mouth of the womb and, in some unexplained way, diminishes the bleeding. I simply give it as an empirical fact, for which I can assign no cause. It may be from a variety of influences; when the cervix is distended there is more room for the tumor to come down, but why this should diminish the bleeding I cannot see. Another explanation is that by pressure it diminishes the amount of blood in the cervical vessels, from which the bleeding may possibly come. Incision of the cervix will often accomplish the same result. This should be done a few days before the expected appearance of the menstrual flow. Such dilatations and incisions are sometimes followed by permanently good results; but their mode of action is obscure. Five years ago I had a case illustrating such a condition as the one under consideration. The hemorrhage was caused by an interstitial fibroid of moderate size. Merely for diagnostic purposes I introduced two sponge-tents in the woman, who was bleeding to death. The unexpected result was the cessation of all serious hemorrhage from that time until the present. She brought a

patient to me not long ago, and said that she had nothing now to complain of but sterility.

If this dilatation should fail you may have recourse to division of the capsule, which will cut off a large source of blood, and will aid the efforts of the womb in extruding the tumor. This operation can be performed with a pair of scissors, those of Kuchenmeister being the best, as the hook on one blade prevents them from slipping or sliding backward while cutting. The instrument I prefer, however, in large tumors, and in those which are high up and not very accessible, is the subcutaneous saw of Adams's, which takes up less room than the scissors and cuts without hemorrhage. While it is best to make as large an opening into the capsule as you can, a small one will often answer as well. I have seen a large tumor work its way out of an incision barely admitting my index finger. In such cases the opening of course becomes larger by ulceration and by stretching. As the tumor emerges from its capsule, its extrusion should be aided by traction and by severing its adhesions with the finger as they come within reach. How will you proceed when the growth projects into the cavity of the womb—that is, when it is largely of the submucous variety? You may remove it by avulsion. This plan, as laid down in the books, is to seize hold of the prominent part of the tumor with the volsella forceps, and, by both traction and twisting, to tear it off from its mucous capsule and out of its bed. A better plan, in my opinion, is to seize the growth as before, with the volsella, and pass up the wire-loop of an ecraseur over the tumor and cut through its mucous capsule flush with the uterine wall. Traction is then made by both volsella and ecraseur, and the growth is enucleated without any resistance from its envelope. The large opening will be closed up by the subsequent contraction of the womb. In this way I have removed quite a number of partly interstitial and partly submucous fibrous tumors, with but one death, and that was from heart-clot on the sixteenth day after the operation.

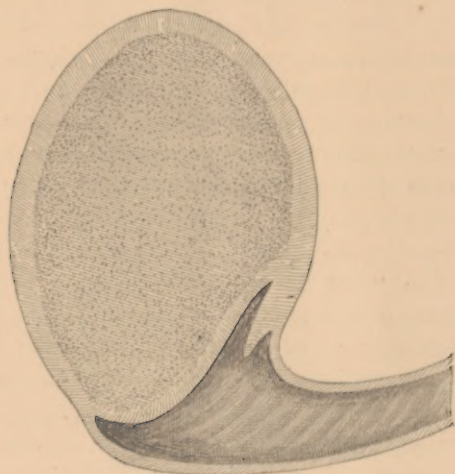
Whenever surgical procedures are out of question we can do no better than to imitate the natural course of the tumor, which tends to become polypoid. This is best done by aiding

the extrusive powers of the womb with full doses of ergot. The firm contraction of the uterine muscle will also lessen the supply of blood, and the tumor will diminish in size and sometimes disappear. The hypodermic administration of ergot is the one which has been followed by the best results. I have seen a number of cases greatly benefited by it. I cannot say that I have ever known a case in which the tumor wholly disappeared, but I have seen it very much reduced in size and the woman freed from all her bad symptoms, including hemorrhage. There are a good many different formulæ that have been devised for the purpose of hypodermic injections of ergot, but the one I prefer is Bonjean's solution of ergotin. The next best is the aqueous infusion of ergot, each minim representing one grain of the drug; five grains of salicylic acid added to each ounce will keep it sweet indefinitely. The proper place to make the injection is in the front of the abdomen, just below the umbilicus.

Immediate enucleation, or the removal of the fibroid at one sitting, is the best plan to pursue whenever the tumor is accessible and the os uteri is dilated or dilatable—the cervix being effaced. There will be less risk of blood-poisoning than in the method of slow extrusion, in which necrosis of the tumor is liable to take place. But the cases in which it can be performed are exceptional. The manner of performing this operation I shall illustrate on this woman, from whose womb I purpose to remove a large interstitial fibroid. Her history is as follows:—

She is a multipara, aged forty, and began about four years ago to lose a great deal of blood at her monthly periods. Recently her losses of blood have been at very short intervals, but it is only four months ago that she perceived an enlargement of her abdomen. Two weeks ago she was sent to me by my friend Dr. J. T. Walker, who found her lying in a garret and bleeding desperately, the hemorrhages having continued for several weeks without cessation. Upon an examination I find what this rough diagram is intended to represent, a fibroid tumor occupying the whole posterior wall, all of the fundus and most of the anterior wall of the womb. Although the womb itself reaches up to the umbilicus, yet its cavity is almost wholly obliterated by the crowding down into it of the tumor. A portion of the growth projects very slightly below the os uteri, and has so dilated it

as to permit operative measures for the removal of the tumor. We have here, then, a typical interstitial tumor with its lower and projecting end involving the posterior lip of the cervix.



After incising the capsule, which is as thick as the rind of a large orange, with Adams's subcutaneous saw, I introduce my index finger and break up the adhesions to the uterine walls. Next I seize the denuded portion of the tumor with a strong volsella, and am now able to bring it into view. While Dr. Baer keeps up traction, I break up those adhesions that come within reach of my finger, and then sever those higher up with this serrated spoon, which my distinguished friend Dr. T. G. Thomas has devised. I have divided all the adhesions within reach, and yet, although the tumor has come down a good deal, and two of us are making traction on as many volsellæ, the tumor cannot yet be dislodged. The reason of this is, that we cannot now make traction across the grain of the highest adhesions, but in their axes. Nor can I reach them over the equator of the spherical tumor with this straight and rigid spoon. Foreseeing this difficulty, I brought an obstetric crotchet with me. Passing this instrument up as far as it will go, I hook it on to the upper end of the tumor, and, as you see, with comparative ease roll it out of its bed and enucleate it. It

is very nearly the size of an infant's head, and is the largest fibroid tumor that I have ever enucleated.¹ It has been removed from within the wall itself of the womb, neither my fingers nor any of the instruments having ever entered the cavity proper of the womb. Observe its dense and nacreous appearance, which is characteristic of these tumors. There has been very little loss of blood during the operation.

The walls of the womb are certainly thickened, and there is a part here that feels like another fibroid of the size of a hickory nut, but it may be a portion of the inverted fundus. Let me not overlook this possibility. To remove a piece of the womb under such circumstances would be a fatal mistake. While there is any doubt, the most prudent plan will be to let it alone, especially as it seems to lie directly under the peritoneum, and is of small size. I must confess that I cannot decide whether it is a fibroid or not. It certainly is not an outgrowth of the one just removed, because that is smooth and glistening at its upper end. Where hypertrophy exists, as it does here, it will be impossible to decide this question until the womb has contracted. Now after the removal of this large mass the womb is so limp that I can insert four fingers into the cavity in its wall and invert and restore it at my pleasure.

In order to check any oozing I shall inject into this cavity a diluted solution of Monsel's salt (one part to three of water). This will act as an astringent and antiseptic. We might dip a sponge in the same solution and pass it into this mural cavity, having a string attached to the sponge for convenience of removal. But, unless more bleeding occurs I shall not do this, because I prefer not to place any foreign body in the womb which will prevent a free outlet to the discharges. She will be kept upon a plain diet, chiefly milk, and will take quinine for two reasons—first, to keep up a firm contraction of the womb; and secondly, to prevent septic poisoning. She will also have opium enough to keep her quiet and comfortable.

¹ The tumor was subsequently found to weigh twenty ounces. The woman did well.

